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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,406	08/19/2003	Gunter D. Niemeyer	017516-002120US	7931

20350 7590 01/24/2005

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EXAMINER

GARLAND, STEVEN R

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 01/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

10/644,406

Applicant(s)

NIEMEYER ET AL.

Examin r

Steven R Garland

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/12/04, 10/31/03, 10/20/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Pri rity under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/31/03, 10/20/03.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

1. The disclosure is objected to because of the following informalities: in numbered paragraph [0001], line 2, June 6 should be -- June 5 -- and the status of the parent applications should be updated. .

Appropriate correction is required.

2. The information disclosure statement (IDS) submitted on 10/31/03 has been considered by the examiner.

3. The information disclosure statement (IDS) submitted on 10/20/03 has been considered by the examiner to the extent indicated, in regards to the documents not considered by the examiner no copies of documents were found in the parents or supplied with instant information disclosure statement.

4. Applicant's election without traverse of the invention of Group I, claims 1-7, in the reply filed on 11/12/04 is acknowledged.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, various terms lack a proper antecedent basis such as in line 9, "the slave arm"; line 11, " the surgical workspace "; line 12, " the tool" and " the holder". Also in claim 1, line 7, it is unclear which workspace " the workspace " refers to.

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In claim 5 it is unclear about the relationship of the end effector, alternative tool, and the number of degrees of freedom, since lines 2-4 appear contradictory in regards to number of degrees of freedom when the same tool is being used. Also in line 5 it is unclear which tool is being referred to.

In claim 6, line 2, " the group" and in line 3, " the camera " both lack a proper antecedent basis.

7. No art rejection is applied to claim 5, due to the uncertainty of what is being claimed. See *In re Steele* 134 USPQ 292.

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-4,6 and 7 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 9,17,43 of U.S. Patent No. 6,424,885. Although the conflicting claims are not identical, they are not patentably distinct from each other because for example comparing instant claim 1 to claim 9 of the patent both are directed to a surgical robotic system; both have a master controller having an input device moveable in a controller workspace; both have a slave

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having an end effector, a linkage supporting the end effector and at least one actuator; both have an imaging system that generates state variable signals; and both have a processor coupling the master controller to the slave arm.

The patent claim however does not positively require that the transformation be changed in response to a tool change while instant claim 1 requires it.

It would have been obvious to one of ordinary skill in the art to modify the patent claim to change the transformation when a tool is changed to a selected alternative tool.

Similar comparisons can be made for the other claims.

10. Claims 1-4,6 and 7 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 9,18,38 of U.S. Patent No. 6,424,885. Although the conflicting claims are not identical, they are not patentably distinct from each other because for example comparing instant claim 1 to claim 9 of the patent both are directed to a surgical robotic system; both have a master controller having an input device moveable in a controller workspace; both have a slave having an end effector, a linkage supporting the end effector and at least one actuator; both have an imaging system that generates state variable signals; and both have a processor coupling the master controller to the slave arm.

The patent claim however does not positively require that the transformation be changed in response to a tool change while instant claim 1 requires it.

It would have been obvious to one of ordinary skill in the art to modify the patent claim to change the transformation when a tool is changed to a selected alternative tool.

Similar comparisons can be made for the other claims.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 1-4,6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green 5,808,665 in view of Green 5,631,973 in further view of Nose et al. 5,053,976.

Green 5,808,665 teaches a robotic surgical system with a slave, a master, an imaging system, a processor, and mapping the image of the end effector to the operator control space. See the figures; col. 1, lines 56-62; col. 2, lines 3-37; col. 3, lines 26-58; col. 4, lines 6-21; col. 4, line 66 to col. 5, line 47; col. 6, lines 19-36; col. 7, lines 51-54; col. 8, lines 44-57; col. 10, line 61 to col. 11, line 65. Green however does not go into details about the coordinate transformation process.

Green 5,631,973 teaches a robotic surgical system which uses coordinate transformation, a slave, a master, an image capture system, a processor, and mapping the image of an end effector to the operator control space. See the figures; col. 1, line 31 to col. 2, line 10; col. 3, lines 16-62; col. 4, line 6 to col. 5, line 12; col. 6, lines 7-15; col. 7, lines 25-35; and col. 7, line 58 to col. 8, line 9.

It would have been obvious to one of ordinary skill in the art to modify Green in view of Green and use a coordinate transformation process to implement the mapping process.

While Green 5,631,973 does not expressly state that a remapping is performed when the imaging system is moved. Green 5,631,973 however discloses in col. 3, lines 16-62 for example, that the coordinate transformation is based in part on the imager state.

It would have been obvious to one of ordinary skill in the art to modify Green in view of Green and compute a new transformation when the imager is moved changes its state so that the coordinate transformation reflects the actual conditions and gives the correct results.

Green 5,808,665 also teaches that the manipulators can have various degrees of freedom (col. 8, lines 44-57); that various types of tools can be used (col. 7, lines 50-54); and that various types of hand controls and manipulators can be used (col. 11, lines 1-67).

Green 5,808,665 however does not expressly show the use of manipulators with different degrees of freedom or show exchanging tools.

It would have been obvious to one of ordinary skill in the art to modify the Green combination in view of the express teachings in the 5,808,665 patent and use a manipulator which is kinematically dissimilar for ease in constructing the device and for reducing the chance of incorrect motion.

Nose et al. teaches changing the coordinate transformation in response to a change in tools. See col. 4, lines 27-45, for example.

It would have been obvious to one of ordinary skill in the art to modify Green in view of Nose and change the coordinate transformation in response to a change in tool so that the transformation reflects the tool that is in use and to prevent injury to the patient.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven R Garland whose telephone number is 571-272-3741. The examiner can normally be reached on Monday-Thursday from 6:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard, can be reached at (571)272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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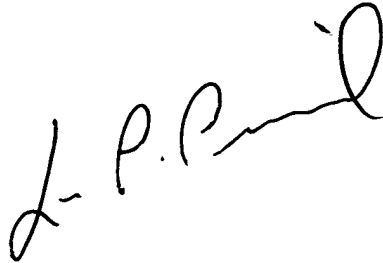
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SR 6

STEVEN GARLAND

A handwritten signature in black ink, appearing to read "L. P. Picard", written in a cursive style.

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100